

What is claimed is:

1. A method of describing pattern repetitiveness of an image comprising the steps of:

(a) projecting an image on a predetermined axis having a predetermined direction;

5 (b) decomposing the projected image down one level;

(c) increasing a threshold value until a pattern quantizing value is retained, and denoising the decomposed data; and

(d) describing pattern repetitiveness of the image using the pattern quantizing value of the denoised data and the threshold value used for  
10 denoising.

2. The method of claim 1, wherein the decomposition is based on a discrete wavelet transform.

3. The method of claim 1, wherein step (c) comprises the steps of:

(c-1) calculating the pattern quantizing value of the projected image;

(c-2) decomposing the projected image down one level;

(c-3) denoising the decomposed result data using a predetermined  
5 threshold value;

(c-4) calculating the pattern quantizing value of the denoised data;

(c-5) discriminating whether a current pattern quantizing value is identical to a previous pattern quantizing value;

(c-6) increasing the threshold value if the current pattern quantizing  
10 value is identical to the previous pattern quantizing value, and returning to  
step (c-3); and

(c-7) determining the previous pattern quantizing value as a final  
pattern quantizing value if the current pattern quantizing value is not identical  
to the previous pattern quantizing value.

4. The method of claim 3, wherein step (d) comprises:

(d') describing the pattern repetitiveness of the image on the basis of  
the pattern quantizing value determined in the step (c-7) and the threshold  
value.

5. A pattern repetitiveness describing method of an image  
comprising the steps of:

(a) projecting an image on a predetermined axis having a  
predetermined direction;

5 (b) decomposing the image until the level at which a previous pattern  
quantizing value and a pattern quantizing value after the decomposition are  
retained as they are, and denoising; and

(c) describing the pattern repetitiveness of the image using one of the  
pattern quantizing value of the data from which at least level number and  
10 noise are removed, and the threshold value used for denoising.

6. The method of claim 5, wherein the decomposition is based on a discrete wavelet transform.

7. The method of claim 5, wherein step (b) comprises the steps of:

(b-1) calculating the pattern quantizing value of the projected image;

(b-2) decomposing the projected image down one level;

(b-3) calculating the quantizing value of the decomposed result data;

5 (b-4) determining whether the previous pattern quantizing value is identical to the pattern quantizing value after the decomposition;

(b-5) if the previous pattern quantizing value is identical to the pattern quantizing value after the decomposition, returning to step (b-2); and

10 (b-6) if the previous pattern quantizing value is not identical to the pattern quantizing value after the decomposition, determining a previous level as a final level.

8. The method of claim 7, wherein the pattern repetitiveness describing method of the image further comprises the steps of:

(b-7) denoising data of the level determined in the step (b-6) using the predetermined threshold value;

5 (b-8) calculating the pattern quantizing value of the denoised data;

(b-9) determining whether the current pattern quantizing value is identical to the previous pattern quantizing value;

(b-10) if the current pattern quantizing value is identical to the previous pattern quantizing value, increasing the threshold value, and  
10 returning to step (b-7); and

(b-11) if the current pattern quantizing value is not identical to the previous pattern quantizing value, determining the previous pattern quantizing value as a final pattern quantizing value.

9. A method of grouping images having similar texture characteristics within an image database in which a plurality of images are stored, the method comprising the steps of:

(a) projecting an image on a predetermined axis having a  
5 predetermined direction;

(b) decomposing the projected image down one level;

(c) increasing a threshold value until a pattern quantizing value is retained, and denoising the decomposed data;

(d) determining pattern repetitiveness vectors including the pattern  
10 quantizing value of the denoised data and the threshold value used for denoising as pattern repetitiveness descriptors of images; and

(e) grouping images having similar texture characteristics using the pattern repetitiveness descriptors of the images.

10. A method of grouping images having similar texture characteristics within an image database in which a plurality of images are stored, the method comprising the steps of:

(a) projecting an image on a predetermined axis having a  
5 predetermined direction;

(b) decomposing the image until the level at which a previous pattern  
quantizing value and a pattern quantizing value after the decomposition are  
retained as they are, and denoising;

(c) determining a level number of the denoised data, a pattern  
10 quantizing value, and a threshold value used for denoising as pattern  
repetitiveness descriptors of the image; and

(e) grouping images having similar texture features using the pattern  
repetitiveness descriptors of the images.